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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|--------------------------------|------------------|
| 10/688,147 | 10/16/2003 | Masayoshi Hiramoto | 10873.0805USD1 | 9228 |
| 23552 | 7590 | 10/28/2004 | | |
| MERCHANT & GOULD PC P.O. BOX 2903 MINNEAPOLIS, MN 55402-0903 | | | EXAMINER TUGBANG, ANTHONY D | |
| | | | ART UNIT 3729 | PAPER NUMBER |

DATE MAILED: 10/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|------------------------|---------------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 10/688,147 | HIRAMOTO ET AL. |
| | Examiner | Art Unit |
| | A. Dexter Tugbang | 3729 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 14 July 2004.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 25-30 is/are pending in the application.
- 4a) Of the above claim(s) 25-27 is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 28-30 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. 09/948,175.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date _____.
- 4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____.

DETAILED ACTION

Response to Amendment

1. The applicant(s) amendment filed on 7/14/04 has been fully considered and made of record.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Election/Restrictions

3. As a result of the amendment filed on 7/14/04, this application contains claims directed to the following patentably distinct species of the claimed invention.

Species A, directed to an “oxide target” of Fe and O, Claims 25-27; and

Species B, directed to a “compound target” not inclusive of Fe and O, Claims 28-30.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, there are no generic claims.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after

the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

4. Because these inventions/species are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

5. Amended Claims 25-27 are directed to an invention that is independent or distinct from the invention originally claimed for the reasons set forth above.

Since applicant has received an action on the merits for the originally presented invention (i.e. Species B), this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, Claims 25-27 have been withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 102

6. With respect to Claims 28-30, the rejections below are hereby repeated for the applicants' convenience.

7. Claims 28 and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Yokoyama et al 4,889,767.

Regarding Claim(s) 28, Yokoyama discloses a method comprising: forming a magnetic compound film of an oxide ferrite, or oxide ferromagnetic material, by sputtering with a compound target while applying a voltage to a substrate including a plane on which the oxide ferrite is to be formed so as to adjust an amount of oxygen supplied to the oxide ferrite from the oxide target (see col. 16, line 37+). The claimed “compound target” is read as the apparatus shown in Figure 2.

Alternatively, the oxide ferromagnetic material and apparatus (in Fig. 2) of Yokoyama can be alternatively read as the claimed “magnetic compound film” and “compound target”, respectively. It is noted that the limitations of “magnetic compound film” and “compound target” (in Claim 28) are considered to be inclusive of the limitations of “oxide ferrite” and “oxide target” (in Claim 25), respectively.

Regarding Claim(s) 29, Yokoyama teaches a bias voltage (see col. 17, lines 16+) applied to the substrate in the oxide target or compound target (apparatus of Fig. 2), which can be broadly read as the claimed “high-frequency bias voltage”. It is noted that any voltage taught by Yokoyama can be read as a “high-frequency bias voltage”, since the limitations of the claims do not recite any specific voltage values.

Claim Rejections - 35 USC § 103

8. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yokoyama et al in view of Japanese Patent Publication JP 1-239821, referred to hereinafter as JP'821.

Yokoyama discloses the claimed manufacturing method as previously discussed. Yokoyama does not mention that a substrate temperature is heated between 250-700°C.

JP'821 shows that heating the substrate to a temperature of at least 400°C improves the lamination or bonding characteristics of a coated magnetic material on a substrate (see Purpose and Constitution).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the method of Yokoyama by providing an elevated substrate temperature, as taught by JP'821, to advantageously improve the laminating and bonding characteristics of the oxide ferrite or magnetic compound film on the substrate.

Response to Arguments

9. Applicant's arguments filed on 7/14/04 have been fully considered but they are not persuasive.

In regards to the merits of Yokoyama et al as applied to Claim 28 above, the applicant(s) assert that Yokoyama does not teach "forming the magnetic compound film by sputtering with a compound target *while* applying a bias voltage to a substrate" (lines 2-3 of Claim 28). It appears that the applicant(s) are saying that "sputtering" and "applying a bias voltage" occur simultaneously or concurrently by placing a great deal of emphasis on the term of "while" above.

The examiner most respectfully disagrees. It is noted that in the rejection above, the examiner stated than any voltage applied by Yokoyama can be read as a "bias voltage" or "high-frequency bias voltage". While it is true that Yokoyama does apply a voltage during a plasma treatment, Yokoyama also applies a voltage during sputtering. Sputtering is a conventional, old and well known technique used in material deposition that explicitly requires a voltage to be applied during deposition. As evidence of this, Yokoyama discusses at least one example where

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a voltage is applied concurrently during sputtering (see col. 9, lines 8-44). Here, Yokoyama mentions the use of a DC voltage or a kinetic energy voltage, of which either can be read as a “bias voltage” (line 3 of Claim 28) or a “high-frequency bias voltage” (line 2 of Claim 29) that is applied and present during sputtering. Therefore, the examiner’s position is that Yokoyama does fully satisfy the limitations of “forming the magnetic compound film by sputtering with a compound target while applying a bias voltage to a substrate”.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to A. Dexter Tugbang whose telephone number is 703-308-7599. The examiner can normally be reached on Monday - Friday 7:00 am - 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 703-308-1789. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



A. Dexter Tugbang
Primary Examiner
Art Unit 3729

October 27, 2004